



Emergency Communications

2011 Missouri Interoperable
Communications Conference



Emergency Communications





***Statewide
Public Safety
Communications
Systems***

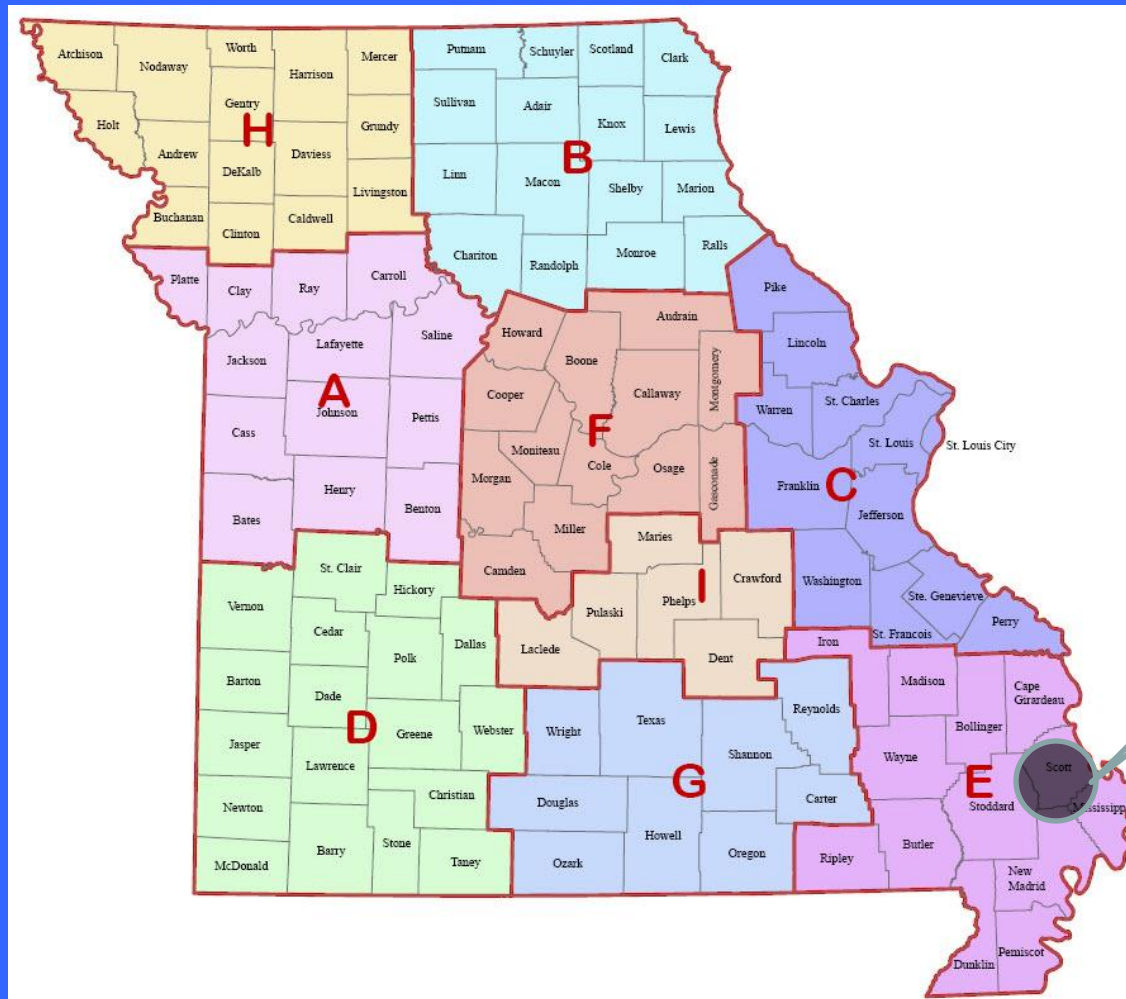


Statewide Radio Systems

- ✓ ***Missouri State Highway Patrol***
- ✓ ***Missouri Department of Transportation***
- ✓ ***Missouri Department of Conservation***
- ✓ ***MOSWIN – Missouri Statewide Interoperability Network (Under Construction)***

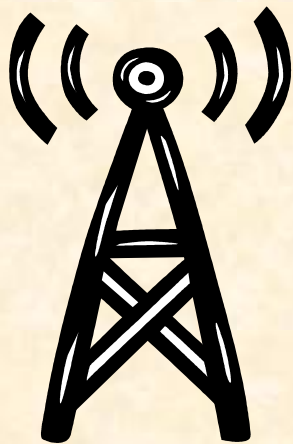
Pilot Project

Projected Online 1st Quarter 2011



City of
Sikeston
and
Local
area
MSHP

Highlighted area is approximate coverage area



SEMA Communications



SEMA Radio Room

**State
Agency
and Utility
Partners
Radios**



**Amateur
Radio
Desk**

- 2 VHF/UHF**
- 1 KAM + TNC**
- 1 Kenwood TS-450**
- 1 SCS USB-II Packet
III**



SEMA Shared Antenna Farm

East Roof



**VHF/UHF
Verticals**

**HF
Multi-band
Longwire**

**SG-230
HF
Autotuner**



Public Safety
Agencies

Amateur Radio

Civil Air Patrol

Federal

National Guard



SEMA Vieth Drive Tower
Jefferson City



Governmental and Auxiliary Radio Systems



SEMA Radio Room



**FEMA
FNARS
1000 watts
HF Radio**

FEMA FNARS Radio



FNARS

FEMA National Radio System

- **Nationwide HF Radio System**
- **Connects FEMA Regions and other federal entities**
- **FNARS radio in each State**
- **Connects State EOC to FEMA Regional Headquarters**



MARS

Military Auxiliary Radio System

- ***National Department of Defense Program***
 - ***Voice and Digital Message Handling***
 - ***Department of Defense Frequencies***
-

DPS Agency License

AAN7ZA



SHARES

Shared Resources

- National Communications System
- Interagency emergency message handling system
- Federal – State – Industry participants
- Federal HF Channels



Operation SECURE

State Emergency Capability Using Radio Effectively

- Between State-Local Entities
- Intrastate and Interstate operation
- Emergency Comms only
- 12 Channels between 2-8 MHz
- FCC umbrella license to State of MO
- State agencies/local agencies licensed under State umbrella





What is Amateur (HAM) Radio?



What is Amateur (HAM) Radio?

- **A hobby and a service**
- **Called 'amateurs' because they receive no compensation. Commercial radio operates for profit.**
- **FCC license is required.**
- **Local and worldwide communications capability**
- **Voice and data transmissions are authorized**



What is Amateur (HAM) Radio's role in Emergency Communications?





What is Amateur (HAM) Radio's role in Emergency Communications?

Provides a means of communications when conventional communications fail, such as:

- Landline telephones/fax
- Cellular telephones
- Internet
- Public safety radio systems
- Satellite

Works at the request of a 'served agency' such as:

- Local-county-state emergency management agencies
- Local shelters
- Local hospitals





What is Amateur (HAM) Radio's role in Emergency Communications?

What communications services can Ham Radio provide to served agencies?

- Provide primary or backup communications along evacuation routes or between venues such as shelters or EOCs.
- Send and receive messages via voice or digital modes
- Use radio to send internet email by connecting to worldwide Winlink 2000 system



What is Amateur (HAM) Radio's role in Emergency Communications?

Can I communicate with SEMA on Ham Radio?

Yes, provided that SEMA has activated the ham radio networks capable of reaching your location.

Can a ham radio operator "not affiliated with an official entity" communicate directly with SEMA to provide situational awareness and request resources?

Vetting of sources and the verification of facts are essential elements in establishing the authenticity of reports and requests. Situational awareness reports could be received and assessed on a case by case basis. Resource requests must come from an official entity and be authorized by a person of authority within the entity. This protocol is necessary in order to minimize the duplication and mismanagement of resources.



ARES

Amateur Radio Emergency Service

- A group of trained amateur (Ham) radio volunteers who provide assistance to served agencies or the public in times of disaster.
- Organized and sponsored by the American Radio Relay League (ARRL), Newington, CT.
- Primarily utilized at the LOCAL level but may be called for service at any level
- Provides primary or backup emergency communications at LEOCs, shelters, hospitals and related venues





RACES

Radio Amateur Civil Emergency Service

- Created by FCC Part 97 within the Amateur Radio Service
- A group of trained amateur (Ham) radio volunteers who provide assistance to a **sponsoring governmental entity** such as an emergency management organization.
- Primarily utilized at the LOCAL level but may be called for service at any level
- Provides primary or backup emergency communications at LEOCs, shelters, hospitals and related venues





Government Disaster Drills

FCC Report and Order 10-124

July 14, 2010

Entity Employees

Permits participating entity employees to operate amateur radio if employed by the entity

Limited to the "duration and scope of the drill, test or exercise...and...to operational testing immediately prior to the drill, test or exercise"



Non- Government Disaster Drills

FCC Report and Order 10-124

July 14, 2010

Entity Employees

Permits participating entity employees to operate amateur radio if employed by the entity

Limited to the "duration and scope of the drill, test or exercise...and...to operational testing immediately prior to the drill, test or exercise"

No more than 1 hour per week; except that two 72 hour periods may also be conducted in any calendar year.



***How can I find
Amateur Radio
Operators in my
locale?***



How can I find Amateur Radio Operators in my locale?

- Ask around town
- Search internet for local or regional amateur radio clubs

<http://www.arrl.org/find-a-club>

<http://www.ares-mo.org>

<http://www.qrz.com/db/?cmd=1>

- Contact DPS Amateur Radio Coordinator for assistance

J.D. Simmons
(573) 522-2380



“Operation Southern Sparks”

Interoperable Communications Exercise

January 27, 2011





Fundamental Exercise Goals

- Assess the interoperability of governmental and non-governmental systems
- Assess the capacity, efficiency and accuracy of stand-alone and integrated communications systems that might be available for statewide emergency response

Missouri 2011 Communications Functional Exercise Venues

**FEMA
Region VII
Kansas City**

**FNARS
Radio**

**SEMA
SEOC
Jefferson
City**

- Conventional comms
- MSHP Public Safety Radio
- Ham Radio
- Auxiliary Radio
- Cache Cellular

**SACC
Poplar Bluff**

- Local Ham Radio
- MONG
- Sprint/Nextel cache Cellular
- MSHP
- Public Safety Radio
- Sat Internet
- Office Phones
- MSHP Ham Radio

**MoDOT
MEROC
St. Clair**



- MoDOT Radio
- Public Safety Radio
- Ham Radio
- Sat Internet
- Phones

**MoDOT
MEROC
Dexter**



- MoDOT Radio
- Public Safety Radio
- Ham Radio
- Sat Internet
- Phones

**MoDOT
MEROC
Van Buren**



- MoDOT Radio
- Public Safety Radio
- Ham Radio
- Sat Internet
- Phones

**LSA
Six Flags
Parking
Lot**



- Ham Radio
- Public Safety Radio
- Sat Internet
- Phones
- MONG
- SPRINT/Nextel cache Cellular
- STARRS MCV

**LSA
Sikeston
Athletic
Field**



- Ham Radio
- Public Safety Radio
- Sat Internet
- Phones
- MONG
- Sprint/Nextel cache Cellular
- ATT Vanguard Pico-cell

**LSA
Malden
Airport**



- Ham Radio
- Public Safety Radio
- Sat Internet
- Phones
- MONG
- ATT Vanguard Pico-cell



2 vehicles
to
LEOCs

- Ham Radio
- Public Safety Radio
- Conventional office comms
- Sat phones
- Sat Internet
- Five ATT TerreStar Cellular/Sat phones
- MONG to County EOCs
- DPS MOSWIN Trunking System Sikeston Pilot (Tentative)

Local EOCs

City of
Hayti

City of
Sikeston

City of
Kennett

New
Madrid
County

City of
Malden

Cape
Girardeau
County

City of
Caruthersville

City of
Cape
Girardeau



FEMA



Sprint

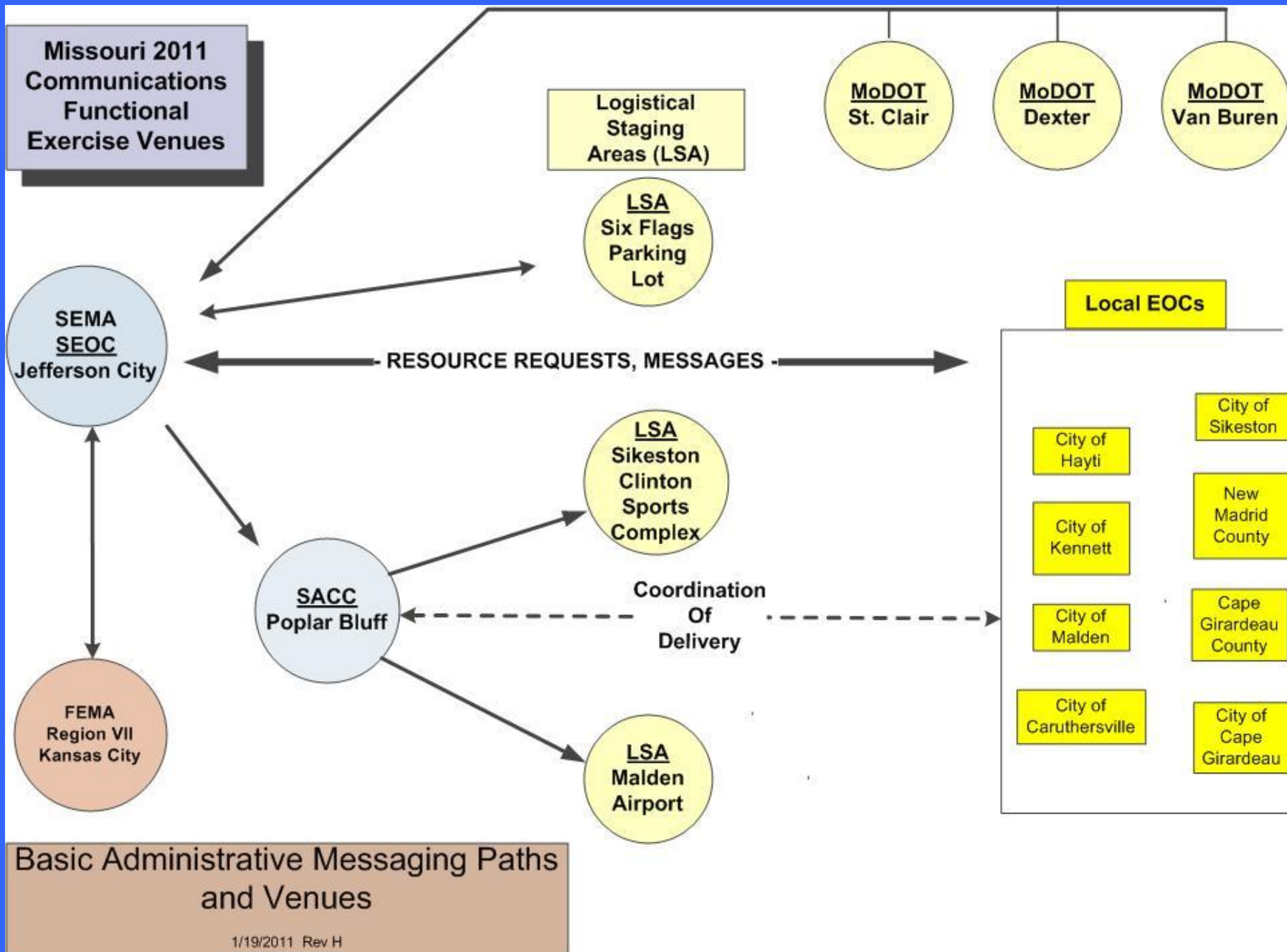


at&t



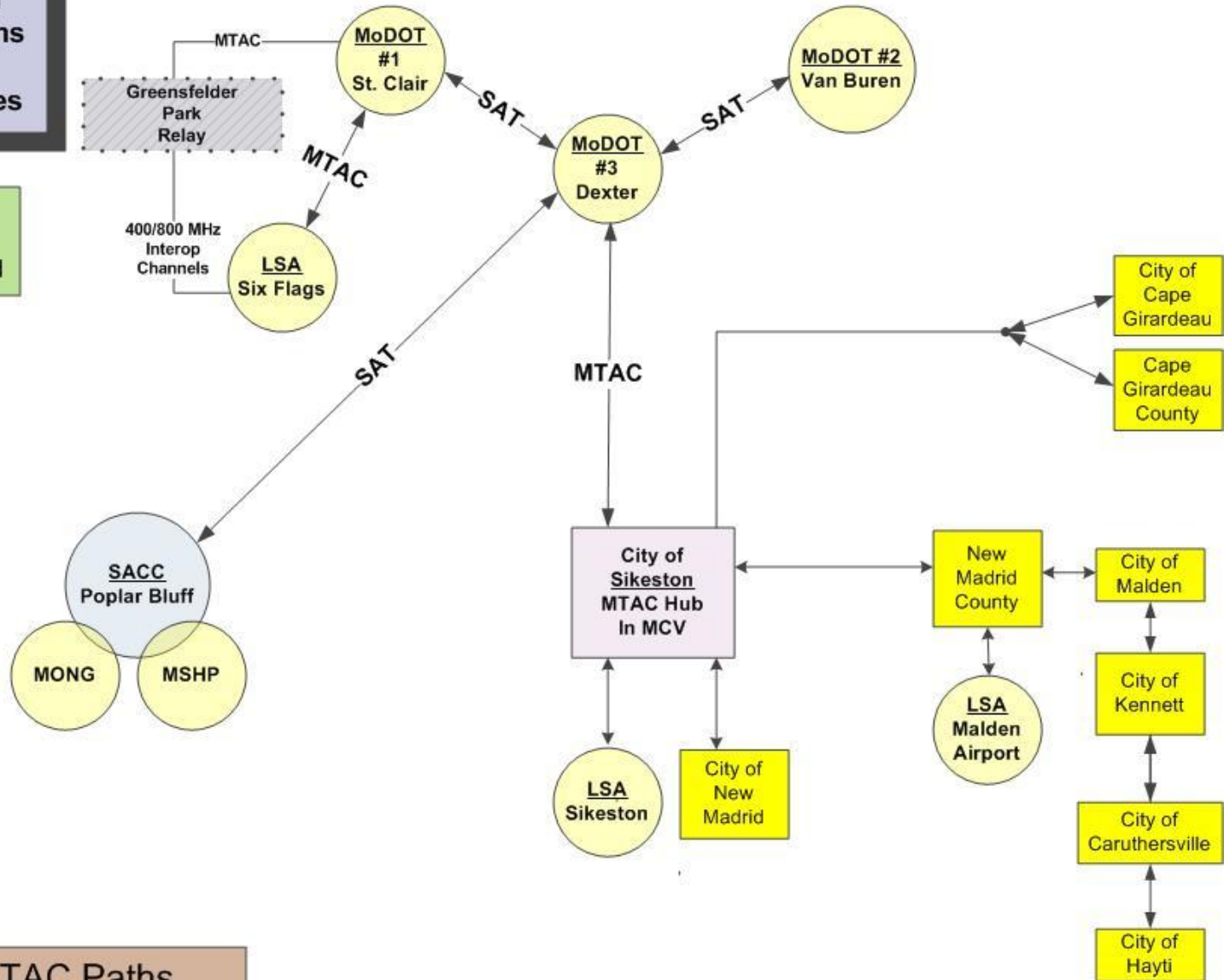
Proposed Communications Assets

Rev J



Missouri 2011 Communications Functional Exercise Venues

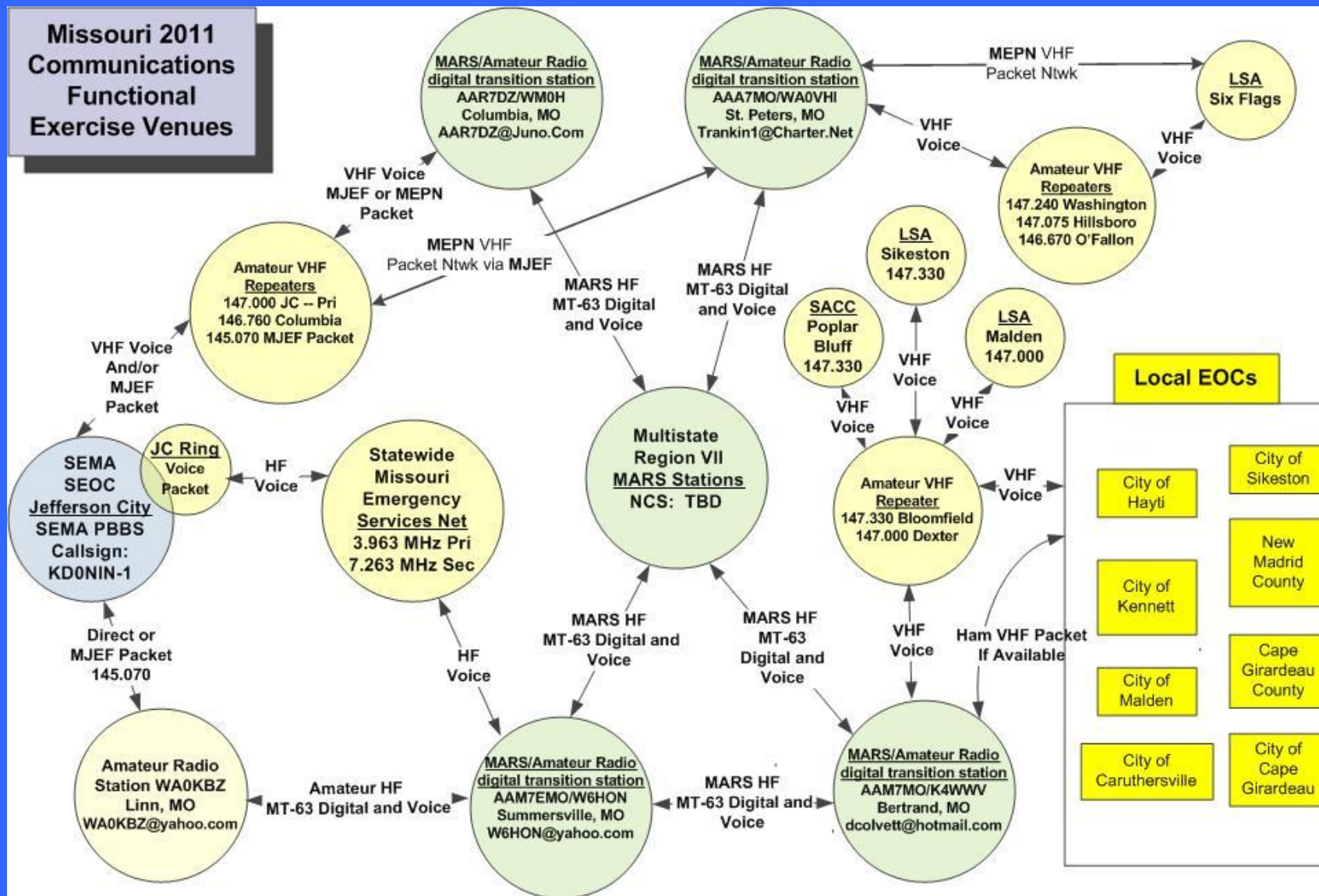
All paths are MTAC unless otherwise noted



Interop MTAC Paths

01/19/2011 Rev B

Missouri 2011 Communications Functional Exercise Venues



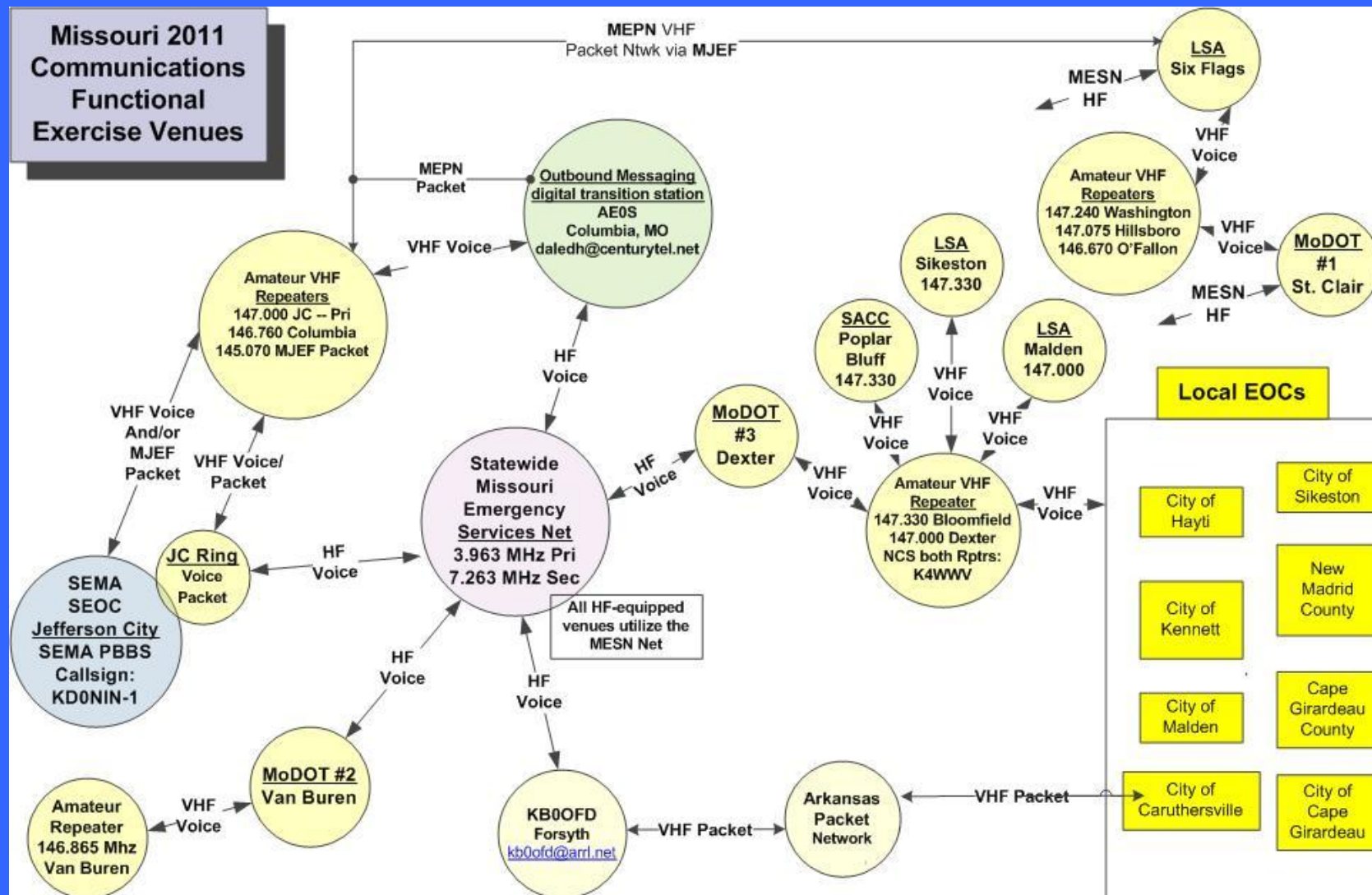
MARS/Amateur Radio Interop Messaging Paths

01/19/2011 Rev E

Notes:

- Additional Modes: Winlink, Telnet, Internet Email, CW, Other digital modes, MEPN (St. Louis to Jefferson City)
- Paths not labeled MARS are Amateur Radio
- SEMA Radio Room Email: sema.semadps.mo@gmail.com

Missouri 2011 Communications Functional Exercise Venues



Simplified Amateur Radio Interop Messaging Paths

01/21/2011 Rev D

Notes:

- Additional Modes: Winlink, Telnet, Internet Email, CW, Other digital modes, MEPN (St. Louis to Jefferson City)
- SEMA Radio Room Email: sema.semadps.mo@gmail.com



Exercise Highlights

- First time that private common carriers were integrated into the statewide exercise
- First time that MARS was integrated into the statewide exercise
- High level of amateur radio participation - approximately 90 amateur stations checked in to Missouri Emergency Services Net to assist in handling traffic
- Public safety agencies, military and non-governmental organizations played well together and learned from each other.
- Communications players were innovative in seeking alternate methods of communication when necessary



Improvement Hot Topics

Amateur Radio:

- More message handling training needed statewide
- Training for potential NCS operators, especially at local venues
- More training on packet operations
- More packet stations statewide, more packet stations at SEMA
- Separate inbound/outbound radio message paths at SEMA and perhaps statewide
- Broadband HF antennas or re-tune when changing frequencies to pass traffic
- Encourage more use of digital modes on HF



FEMA

National

Level Exercise

May 2011



POC:

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Questions?